Community Announcement

Clarifications of NASA Discovery Program Draft Announcement of Opportunity

General Information:

Solicitation Number:	NNH14ZDA004J
Posted Date:	May 5, 2014
Release of AO:	September 2014 (target)
Proposal Due Date:	90 days after release of AO
Recovery and Reinvestment Act Action:	No
Classification Code:	A – Research and Development
Issued by:	Science Mission Directorate, NASA
NAICS Code	541712
CFDA Number:	43.001 Science

On February 19, 2014, NASA's Science Mission Directorate (SMD) released a Community Announcement containing information about its intention to release a Draft Announcement of Opportunity (AO) for Discovery Program missions by May 2014. SMD is now issuing further information clarifying its intentions.

NUMBER OF SELECTIONS:

It is now anticipated that approximately two to five Discovery investigations will be selected for nine-month, $3M (Real Year) Phase A concept studies through this AO. At the conclusion of these concept studies, it is planned that one to two Discovery investigations will be selected to continue into Phase B. Missions of Opportunity are still not solicited as a part of AO.

STRATEGIC PLANS:

Discovery Program investigations must address NASA's planetary science objectives as described in *2014 NASA Strategic Plan* and the *2014 NASA Science Plan*. Both documents are now available at http://science.nasa.gov/about-us/science-strategy/.

TECHNOLOGY DEMONSTRATION OPPORTUNITIES:

Discovery Program investigations may also propose Technology Demonstration Opportunities (TDOs) to demonstrate new capabilities. TDOs may not demonstrate radioisotope power systems. TDOs may demonstrate technologies developed by any U.S. organization.

COSTS OF RADIOISOTOPE HEATER UNITS OR RADIOACTIVE SOURCES:

Proposed investigations may include the use of radioactive sources for science instruments and the use of radioisotope heater units (RHUs). Use of radioactive sources

or RHUs will incur costs for the environmental review and launch approval processes which will be included as part of the Principal Investigator (PI)-Managed Mission Cost (PIMMC). RHUs, themselves, will be provided by NASA as Government-Furnished Equipment (GFE).

INFUSION OF NASA-DEVELOPED TECHNOLOGIES:

A wide range of NASA-funded, new technologies was described at the Discovery AO Technology Workshop on April 9, 2014. Presentations from that event, along with a video recording, are available at the Discovery Acquisition Website (http://discovery.larc.nasa.gov technology_workshop.html).

Decisions have now been made concerning the infusion strategies to be followed for NASA-developed technologies. These decisions are summarized in Table 1.

Table 1: Infusion strategies of NASA-developed technologies.

Technology	Required?	GFE?	Incentivized?	Included in PIMMC?	Evaluation of Risk?
NASA Evolutionary Xenon Thruster (NEXT)	No	2 thrusters + 2 PPUs	No	All other costs	Risk of thruster and PPU readiness for mission integration will not impact proposal evaluation.
Heatshield for Extreme Entry Environment Technology (HEEET)	No	NASA pays for HEEET team consulting and technology transfer	Cost of 3D woven TPS material up to $10M	Costs for procurement of woven TPS material above $10M and heat shield fabrication.	Risk of developing 3D woven TPS on time will not impact proposal evaluation.
Deep Space Optical Communications (DSOC)	No	DSOC hardware and funding for integration and operations support team	$30M	Costs of integration and spacecraft operations team during demonstration	Risk of DSOC readiness for mission integration will not impact proposal evaluation.
Light Weight Radio-isotope Heater Units (LWRHUS)	No	Yes	No	NEPA/NLSA costs	

Technology	Required?	GFE?	Incentivized?	Included in PIMMC?	Evaluation of Risk?
Advanced Solar Arrays (ASA)	No	No	No	All costs	
Deep Space Atomic Clock (DSAC)*	No	No	$5M	All costs	Risk of DSAC readiness for mission integration will not impact proposal evaluation.
Green Propellant*	No	No	No	All costs	
Autonomous Landing and Hazard Avoidance Technology (ALHAT)	No	No	No	All costs	

*Available as demonstrated. Any additional mission-specific adaptations must be paid for by the mission as part of PIMMC.

Potential mission offerors should note that the demonstration of Deep Space Optical Communications (DSOC) is no longer required. The Engineering Science Activity (ESA) on atmospheric entry is still required, however, of all mission investigations performing an entry into an atmosphere. Offerors should also note that since the Advanced Solar Arrays and Green Propellant systems will be available as commercial products, they will be considered as technically mature commodities. Finally, the costs of any mission-specific adaptations to either the Deep Space Atomic Clock or the Green Propellant systems will be included as part of the PI-Managed Mission Cost.

LAUNCH SERVICES:

Launch Vehicle costs and procurement remain the responsibility of NASA. The approach used in the 2006 Discovery AO will be used in this AO: a standard launch performance capability will be defined and provided at no cost to the proposer. Marginal costs for higher performance launch vehicles will be counted against the PIMMC. Details are still under discussion.

FOREIGN INSTRUMENT CONTRIBUTION LIMIT:

Foreign contributions to the science instruments remain constrained to be no more than one-third of the NASA instrument cost. To clarify:

$$\frac{\text{Value of Foreign Instrument Contribution}}{\text{PI-Managed Instrument Cost}} \leq \frac{1}{3}$$

"PI-Managed Instrument Cost" is defined as the portion of the PI-Managed Mission Cost ascribed to instruments.

EXCLUSION OF PHASE E COSTS FROM PIMMC CAP:

Operations costs (Phase E) are *not* included in the cap on the PIMMC, but will be evaluated for reasonableness. This exclusion will *not* apply to the development of flight or ground software, ground hardware, or testbed development or refurbishment that occurs after launch. These activities will be considered deferred Phase C/D work and their costs will be included under the PIMMC cap. Only costs related to spacecraft operations will be excluded from the cap.

NASA has not approved the issuance of the Discovery AO and this notification does not obligate NASA to issue the AO and solicit proposals. Any costs incurred by prospective investigators in preparing submissions in response to this notification or the planned Draft Discovery AO are incurred completely at the submitter's own risk.

Further information will be posted on the Discovery Program Acquisition Page at http://discovery.larc.nasa.gov/ as it becomes available. Questions may be addressed to Dr. Michael New, Discovery Program Lead Scientist, Science Mission Directorate, NASA, Washington, DC 20546; Tel.: (202) 358-1766; Fax: (202) 358-3097; E-mail: michael.h.new@nasa.gov.